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APPLICATION NO.	FILING DATE	FIRST NAMED INVENTOR	ATTORNEY DOCKET NO.	CONFIRMATION NO.
09/941,982	08/30/2001	Takashi Kano	011083	7536

23850 7590 01/08/2003

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EXAMINER
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MULPURI, SAVITRI

ART UNIT	PAPER NUMBER
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2812

DATE MAILED: 01/08/2003

#7

Please find below and/or attached an Office communication concerning this application or proceeding.

# Office Action Summary

Application No.

09/941,982

Applicant(s)

Takashi et al

Examiner

Savitri Mulpuri

Art Unit

2812



-- The MAILING DATE of this communication appears on the cover sheet with the correspondence address --

## Period for Reply

A SHORTENED STATUTORY PERIOD FOR REPLY IS SET TO EXPIRE 3 MONTH(S) FROM THE MAILING DATE OF THIS COMMUNICATION.

- Extensions of time may be available under the provisions of 37 CFR 1.136 (a). In no event, however, may a reply be timely filed after SIX (6) MONTHS from the mailing date of this communication.
- If the period for reply specified above is less than thirty (30) days, a reply within the statutory minimum of thirty (30) days will be considered timely.
- If NO period for reply is specified above, the maximum statutory period will apply and will expire SIX (6) MONTHS from the mailing date of this communication.
- Failure to reply within the set or extended period for reply will, by statute, cause the application to become ABANDONED (35 U.S.C. § 133).
- Any reply received by the Office later than three months after the mailing date of this communication, even if timely filed, may reduce any earned patent term adjustment. See 37 CFR 1.704(b).

## Status

- 1) ☒ Responsive to communication(s) filed on Nov 27, 2002
- 2a) ☒ This action is **FINAL**. 2b) ☐ This action is non-final.
- 3) ☐ Since this application is in condition for allowance except for formal matters, prosecution as to the merits is closed in accordance with the practice under *Ex parte Quayle*, 1935 C.D. 11; 453 O.G. 213.

## Disposition of Claims

- 4) ☒ Claim(s) 1-5, 7-14, and 16-18 is/are pending in the application.
- 4a) Of the above, claim(s) \_\_\_\_\_ is/are withdrawn from consideration.
- 5) ☐ Claim(s) \_\_\_\_\_ is/are allowed.
- 6) ☒ Claim(s) 1-5, 7-14, and 16-18 is/are rejected.
- 7) ☐ Claim(s) \_\_\_\_\_ is/are objected to.
- 8) ☐ Claims \_\_\_\_\_ are subject to restriction and/or election requirement.

## Application Papers

- 9) ☐ The specification is objected to by the Examiner.
- 10) ☐ The drawing(s) filed on \_\_\_\_\_ is/are a) ☐ accepted or b) ☐ objected to by the Examiner.  
Applicant may not request that any objection to the drawing(s) be held in abeyance. See 37 CFR 1.85(a).
- 11) ☐ The proposed drawing correction filed on \_\_\_\_\_ is: a) ☐ approved b) ☐ disapproved by the Examiner.  
If approved, corrected drawings are required in reply to this Office action.
- 12) ☐ The oath or declaration is objected to by the Examiner.

## Priority under 35 U.S.C. §§ 119 and 120

- 13) ☐ Acknowledgement is made of a claim for foreign priority under 35 U.S.C. § 119(a)-(d) or (f).  
a) ☐ All b) ☐ Some\* c) ☐ None of:  
1. ☐ Certified copies of the priority documents have been received.  
2. ☐ Certified copies of the priority documents have been received in Application No. \_\_\_\_\_.  
3. ☐ Copies of the certified copies of the priority documents have been received in this National Stage application from the International Bureau (PCT Rule 17.2(a)).  
\*See the attached detailed Office action for a list of the certified copies not received.
- 14) ☐ Acknowledgement is made of a claim for domestic priority under 35 U.S.C. § 119(e).  
a) ☐ The translation of the foreign language provisional application has been received.
- 15) ☐ Acknowledgement is made of a claim for domestic priority under 35 U.S.C. §§ 120 and/or 121.

## Attachment(s)

- 1) ☒ Notice of References Cited (PTO-892) 4) ☐ Interview Summary (PTO-413) Paper No(s). \_\_\_\_\_
- 2) ☐ Notice of Draftsperson's Patent Drawing Review (PTO-948) 5) ☐ Notice of Informal Patent Application (PTO-152)
- 3) ☐ Information Disclosure Statement(s) (PTO-1449) Paper No(s). \_\_\_\_\_ 6) ☐ Other:

Art Unit:

### **DETAILED ACTION**

This action is in response to the applicant's amendment filed on 11/27/02.

#### ***Claim Rejections - 35 USC § 102***

Claims 1,3,5-10, 12,14-16,18 are rejected under 35 U.S.C. 102(b) as being anticipated by Imai et al.

Rejection is maintained same as in previous office action mailed on 6/28/02.

#### ***Claim Rejections - 35 USC § 103***

Claims 2,4, 11, 13 are rejected under 35 U.S.C. 103(a) as being unpatentable over Imai et al.

Rejection is maintained same as in previous office action mailed on 6/28/02.

Claim 17 is rejected under 35 U.S.C. 103(a) as being unpatentable over Kondow et al in combination with Imai et al. .

Rejection is maintained same as in previous office action mailed on 6/28/02.

#### ***Response to Arguments***

Applicant's arguments filed on have been fully considered but they are not persuasive.

Applicant argues that Imai et al teaches broad ranges for both growth rate and thickness by growing first buffer layer at a growth rate of 0.10 to 20 angstroms/sec at thickens in the range of 10-5000 angstroms and growing second layer at a growth rate of 0.10 to 10 angstroms/sec.

Art Unit:

Imai et al argues that growth rate of Imai et al, in one embodiment, is as low as 1.2 A'/sec, 1-3 A/sec and 0.6 A/sec, which are smaller than growth rate of 7 A/sec. However, all the limitations of instant claims fall with the broad disclosed ranges of thickness and growth rate of Imai et al. Applicant mentioned comparative example of growth rate 150 A/sec with film thickens of 5000 A, which is much larger than applicant's claimed film thickness. However, such portion of the disclosure is irrelevant and non-reliable.

Applicant argues that Imai et al falls to disclose growth rate of at least 7A/sec with thickens in the range of 50-300A. However, such limitation is inherently taught in the invention of Imai et al, and can be contemplated through the disclosed broad ranges of 0.10 to 20 A/sec for growth rate and 10- 5000 A/sec for thickness.

Applicant argues that Imai et al do not teach 25-29 a/sec and 51 a/sec. However, Imai teaches 0.10- 20 A/sec as preferred range for growth rate. The choice of increasing growth rate is well with in the scope of the quality of layer, for example, smoothness., which depends on growth time and temperature, pressure, supply of precursor material gases. Normally, change in temperature, concentration, or both, is not patentable modification; however, such changes may impart patentability to process if ranges claimed produce new and unexpected result which is different in kind and not merely in degree from results of prior art; such ranges are termed "critical" ranges, and applicant has burden of proving such criticality; even though applicant's modification results in great improvement and utility

Art Unit:

over prior art, it may still not be patentable if modification was within capabilities of one skilled in art; more particularly, where general conditions of claim are disclosed in prior art, it is not inventive to discover optimum or workable ranges by routine experimentation. In re Aller et al, 105 U.S.P.Q. 233 CCPA (1955) .

Kondow teaches forming plurality of optoelectronic devices , FET from nitride based semiconductor to from OEIC.

**THIS ACTION IS MADE FINAL.** Applicant is reminded of the extension of time policy as set forth in 37 CFR 1.136(a).

A shortened statutory period for reply to this final action is set to expire **THREE MONTHS** from the mailing date of this action. In the event a first reply is filed within **TWO MONTHS** of the mailing date of this final action and the advisory action is not mailed until after the end of the **THREE-MONTH** shortened statutory period, then the shortened statutory period will expire on the date the advisory action is mailed, and any extension fee pursuant to 37 CFR 1.136(a) will be calculated from the mailing date of the advisory action. In no event, however, will the statutory period for reply expire later than **SIX MONTHS** from the mailing date of this final action.

Art Unit:

Any inquiry concerning this communication or earlier communications from the examiner should be directed to S. Mulpuri whose telephone number is 703-305-5184. The fax phone number for the organization where this application or proceeding is assigned is 703-305-5184.

Any inquiry of a general nature or relating to the status of this application or proceeding should be directed to the receptionist whose telephone number is 703-305-0956.

  
SAVITRI MULPURI  
PRIMARY EXAMINER